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CIA

APPENDICES TO ORE 58-48

"The Strategic Value to the USSR of the Conquest of Western Europe and the Near East (to Cairo) prior to 1950."

ORE 58-48 (Appendices)

Published 27 October 1948

CENTRAL INTELLIGENCE AGENCY

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FOREWORD

The appendices here issued constitute three of the four subcommittee reports on which ORE 58-48 was based. In general each subcommittee has analyzed and evaluated, within its own sphere of interest and in terms of the assumptions stated for ORE 58-48, the advantages and disadvantages for the USSR of the presumed operation. The economic, scientific, and military subcommittees have worked by adding the potential of the conquered areas to that of the USSR without taking intangible factors and war damage into account. This was considered to be a valid procedure since it was understood that the intangibles would be given proper weight in the final synthesis of the subcommittees' findings. ORE 58-48 was this synthesis.

The report of the military subcommittee has not been included in these appendices because the material in that report has since been somewhat modified and has appeared in various papers prepared for high-level planning purposes.

APPENDICES TO ORE 58-48

"The Strategic Value to the USSR of the Conquest of Western Europe and the Near East (to Cairo) prior to 1950."

ECONOMICS APPENDIX

This appendix deals with the economic facts of the situation in the Soviet Union, in Eastern and Western Europe, and in the Near East, and the analysis of the economic advantages and disadvantages to the Soviet Union in the occupation of Western Europe and the Near East (to Cairo) by Soviet military forces. This appendix includes, however, only those aspects of the problem which have particular bearing upon the decision which the USSR might make with respect to such possible action and does not purport to be a complete analysis of the economic situation in these areas.

CONCLUSIONS

1. The occupation of Western and Northern Europe and the Near East by Soviet forces could yield to the USSR a number of great long-range economic advantages which undoubtedly are recognized by the Soviet leaders. The principal gains would accrue to the USSR, however, only if the Soviet Union and the entire area under its control were relatively free from damaging attack and if commercial intercourse were possible with the rest of the world. The most important of these economic advantages would be the following:

a. The control and utilization of technical skills (including engineering, mechanical, managerial) and the extensive industrial facilities of Western and Northern Europe. Occupation of that area would more than double the technically skilled manpower under the control of the Soviet Union.

b. Increased availability and facilities for the production of precision and special purpose machine tools, precision gauges, large castings and forgings, and other machinery; the Soviet Union is relatively deficient in these essentials.

c. Acquisition of an iron and steel industry now producing at a higher rate than that of the USSR and which, therefore, would considerably strengthen the Soviet economy.

d. Some additions to the production of finished arms, ammunition, and aircraft. At present, however, the production of these items in Western and Northern Europe is relatively small compared to that of the Soviet Union; the principal immediate asset would be the acquisition by the USSR of manpower skilled in the techniques of modern weapons production.

2. After an extended period of peacetime control, occupation of Western and Northern Europe could greatly accelerate the industrialization of the Soviet Union. Following

NOTE: These Sub-committee reports, on which CIA 58-48 was based, represent agreed conclusions of the working-level representatives of the intelligence organizations of the Departments of State, Army, Navy, Air Force, and CIA. They have not been submitted to the Directors of these organizations for formal concurrence or dissent.

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a preliminary organizing period, the gains to the Soviet Union would mount and could eventually result in an economic unit of tremendous power.

3. It is not impossible that within a period of about ten years the joint economic power (as indicated in the following sections) of the USSR, the Satellites, and the occupied areas would equal that of the United States. Thereafter, the economic superiority of such a consolidation over the United States would become proportionately greater, with each successive year, in skilled as well as total manpower, in industrial capacity, and in the adequacy and self-sufficiency of the area with respect to natural resources.

4. If, however, instead of a negotiated peace, there is continuing global war between the USSR and the United States and its allies, occupation of the European continent and the Near East would have important economic disadvantages which undoubtedly are also recognized by the Soviet leaders.

5. The principal disadvantages (or handicaps to exploitation), quite apart from destruction by military attack or sabotage, are the following:

a. Loss to the Soviet-controlled area of imports of certain strategic materials, particularly natural rubber and tin and other non-ferrous metals. These things would not be available in quantities within the area adequate to maintain full-scale industrial activity (and presumably would be denied to that area by virtue of sea and land blockade), although shortages of certain materials could be mitigated by the use of substitutes, synthetics, and new industrial techniques. Oil, even if adequate in quantity at the source in the Near and Middle East, would be in extremely short supply at consuming points in Western and Northern Europe because of transportation difficulties.

b. The difficulty and cost in manpower of establishing effective governmental and economic control over the occupied area.

c. Interference with Mediterranean and Atlantic coastal shipping under the control of the USSR.

d. Western and Northern European deficits in agricultural products, such as grains, fats and oils*, and textile fibers would have to be made up in part by shipments from Eastern Europe where little "surplus" is available; in any event, diets in Western and Northern Europe would have to be reduced below current low levels for large segments of the population.

e. The extensive destruction of customary channels of trade, established sources of supply, and traditional industrial relationships would further reduce Soviet ability to make effective utilization of the resources, manpower, and industrial capacity acquired in Western Europe.

6. These economic disadvantages consequent to occupation under conditions of global war would prevent the USSR from utilizing fully the potential economic advantages of occupation. Transportation difficulties, deficiencies in certain strategic materials, and problems of organization and management would reduce the output of steel and steel mill products, machine tools and other machinery, electronics apparatus, precision instruments, and other items which the USSR would need from Western Europe. In addition, the productivity of labor would be considerably reduced as a result of

* Estimates of fats and oils are not included in the Appendix attached hereto.

increased sabotage and the probable low morale of the populations in the occupied areas.

7. The occupation of Continental Europe and the Near East, in fact, would not yield immediate economic support to the Soviet Union for a much greater military effort than the Soviets alone could mount at the present time. This arises from the fact that the productive facilities of Western and Northern Europe, as a whole, have not entirely recovered from the destructive effects of the last war; they are not now engaged in, nor could they be readily converted to, production of naval ships, long-range aircraft, certain types of communications equipment and other types of military supplies in which the Soviet Union is deficient for global war. Conversion of facilities to war production, furthermore, would also be hampered under conditions of global war by the damaging attacks to which plant installations would be subjected.

In the event, however, that a period of a year to 18 months elapses before a strong counter-attack can be launched by the United States against the USSR and the areas then under occupation, the Soviets would have time to reorganize Western European production sufficiently to obtain considerable quantities of strategically important industrial products. The acquisition of the industrial plant, equipment, and technical skills of Western Europe would yield under such circumstances substantial wartime economic support to the Soviet Union.

DISCUSSION

1. Raw Material Requirements and Natural Resources.

a. Coal.

In the USSR the peak annual coal supply during World War II was only 108 million tons, or a little more than half the anticipated 1949 output. Although Soviet requirements have increased since that time, primarily as a result of the expansion of industries and transport, the USSR proper is expected to be self-sufficient in coal. The remainder of Continental Europe is not ordinarily self-sufficient in coal, as the United Kingdom has supplemented this area's supplies in previous years. In the event of Soviet conquest, however, those industrial, transportation, and space-heating requirements essential to military occupation in Continental Europe probably could be met without recourse to coal supplies from other areas.

b. Petroleum.

Soviet crude oil output in 1949 will probably reach 32 million metric tons. This is only slightly in excess of prewar output, but considerably above the Soviet peak annual supply during World War II (including lend-lease aid), which reached about 22.5 million tons in 1942. It is likely, however, that the peak wartime supply could not have met minimum needs of the Soviet economy without substantial withdrawals from stocks, whereas the probable depletion of stocks during the war and the tight petroleum situation in the postwar period suggest that present stocks are small. Despite augmented production, analysis of projected Soviet requirements in 1949 suggest a tight over-all supply of crude oil. Under wartime conditions, moreover, a severe shortage of light fractions required for the operation of the Soviet air force is also indicated.

Only a small surplus of petroleum will be available from the Soviet orbit in 1949. Output of crude and synthetic oil in Eastern Europe (including Eastern Austria) will amount to about 6 million tons, roughly two-thirds of which will be consumed in that area. The Asiatic orbit, on the other hand, will be completely dependent on the USSR for its minimum needs, which are, to be sure, negligible.

Western Europe, although adequately supplied with refining facilities, will produce only about 2 million tons of crude and synthetic oil in 1949. Present consumption in this area is at the rate of about 30 million tons per annum, but if maximum conversion to coal were effected and if Western European industry were utilized only to about 70 percent of capacity, requirements might be cut back to 9 million tons annually. This would leave a deficit of 7 million tons.

The availability of Near and Middle Eastern oil to meet the European oil deficit is extremely uncertain, even if the Soviet Union should seize intact the oil wells and pipelines in this region. In the absence of destruction, this area (including Iraq, Iran, and Saudi Arabia) will produce in 1949 at the annual rate of 50 million tons, but transportation facilities, under the most favorable of circumstances, probably would not

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permit the shipment of more than 9 million tons. It has been assumed, however, that a large part of the oil facilities and installations in the Near and Middle East would be seriously damaged or destroyed prior to evacuation by the present operators. Depending on the extent and type of damage and destruction, therefore, the availability of oil from this area to supply European needs would probably be less than the low limits set by transportation difficulties, and, conceivably, could even be virtually nil.

This analysis indicates that the prospective over-all petroleum supply of the USSR and its Eastern European orbit would be barely adequate to meet the wartime requirements of these areas, provided non-essential consumption would be reduced to a minimum. Bottlenecks would be likely to occur in the production of aviation fuel. In Western Europe under Soviet occupation, it would be extremely difficult to supply minimum requirements. Even if as much as 9 million tons were available in, and could be transported from, the Near and Middle East, it would not be sufficient for full-scale utilization of the Western European industrial capacity, nor for any substantial Western European contributions to mechanized warfare. In the longer run, solution of petroleum stringencies would, of course, depend on increased output in the Soviet-controlled area and solution of transportation difficulties.

ESTIMATED OUTPUT AND CONSUMPTION OF CRUDE AND SYNTHETIC OIL IN THE USSR, EUROPEAN ORBIT, AND WESTERN EUROPE, 1949 UNDER PROJECT 50 ASSUMPTIONS

(In millions of metric tons)

	Probable Output	Estimated Consumption
USSR	32	36
European Orbit	6	4
Western Europe	2	9
Total	40	49
Import Availabilities from Near East	9	

c. *Crude Steel.*

The USSR is now producing crude steel at an estimated annual rate of 18.5 million metric tons, or approximately 4 million tons more than its peak wartime supply. In 1944 the USSR consumed an estimated 8.5 million tons of crude steel in the manufacture of principal military end-items — e.g. ammunition, tanks, guns, aircraft, and trucks. Other direct military consumption (e.g. for submarines, fortifications, etc.) is unknown; consumption of steel for maintenance of essential industry, construction and equipment of war plants, and reconstruction of damaged installations is also unknown. Not more than 1.5 million tons, however, were available for these purposes from domestic output, and the raw steel equivalent of machinery and equipment received under lend-lease was not more than 4.5 million tons. Hence, maximum wartime annual consumption may be taken at roughly 14.5 million tons. Essential steel requirements of Soviet industry now, however, may be expected to exceed those of World War II.

Western Europe (not including the United Kingdom) and the satellite countries in Eastern Europe are now producing crude steel at an annual rate of about ~~30~~ 29 million metric tons, of which ~~nearly 25~~ 23 million tons is being produced in Western Europe (including western Germany). The combined rate of output of these areas amounts to about ~~5~~ 6 million tons less than the peak wartime output of the European Axis, and should be sufficient to sustain a war effort nearly comparable to that of the Axis in World War II.

Altogether, the area assumed to be under Soviet control now is producing crude steel at an annual rate of approximately ~~48.5~~ 47.2 million metric tons, or about ~~4~~ 3 million tons more than the peak wartime supply of the Axis powers and the USSR combined. This steel capacity would, in itself, be sufficient to sustain a war effort somewhat greater than the World War II effort of Germany and the USSR combined.

ESTIMATE (MID-1948) OF OUTPUT OF CRUDE STEEL IN THE USSR, EUROPEAN ORBIT, AND WESTERN EUROPE

(In millions of metric tons)

USSR	18.5
European Orbit	5.6
~~Western Germany~~	~~5.75~~
Western Europe (including western Germany)	23.1
Total	~~58.95~~ 47.2.

d. Crude and Synthetic Rubber.

Although available data indicate that there will be more rubber available in the USSR in 1949 than the maximum amount consumed in the Second World War, it is likely that rubber would be a bottleneck in the event the Soviets move into Western Europe and the Middle East. The orbit and areas assumed to be brought under Soviet domination produce no natural or synthetic rubber. Synthetic production in Germany, now confined to the Soviet Zone, is not expected to exceed 15 percent of the German wartime peak. The new rubber supply (synthetic and Soviet reclaimed and natural only) for the area as a whole will be approximately equal to the maximum wartime supply of Germany and the USSR combined; but requirements of the area under Soviet occupation would probably be substantially higher than during World War II. In addition, the short supply of natural rubber in the area would tend to aggravate the over-all deficiency.

e. Aluminum.

During the war years, 1941-45, USSR production of aluminum, including primary and secondary, amounted to about two-thirds of Soviet consumption with the remainder supplied by imports. This does not include aluminum imported in finished products, such as airplanes, which accounted for an important share of Soviet requirements. The 1949 rate of production, however, is expected to exceed the average annual rate of consumption during World War II.

The satellite countries are not expected to meet their total requirements in 1949 under peacetime conditions, falling short by several thousand tons.

Western Europe is expected to produce about 200,000 tons of aluminum in 1949, which is less than half the annual rate of production of Axis Europe during World War II. Capacity of Western Europe has been reduced by dismantling of German plants, two of which have been shipped to the USSR.

If the USSR dominates Europe and the Far East in 1949, about 450,000 tons of aluminum will be produced in that area, of which 350,000 tons could be consumed for direct wartime use, a sufficient tonnage for full-scale military operations.

Although some Western European plants depend on the Western Hemisphere for bauxite, Europe and the USSR could readily become independent of outside sources since Hungary has the world's largest bauxite deposits, and France, Yugoslavia, and Greece can supply substantial tonnages.

ESTIMATED OUTPUT AND REQUIREMENTS OF PRIMARY AND SECONDARY ALUMINUM IN THE USSR, ORBIT COUNTRIES, AND WESTERN EUROPE, 1949

(In thousands of metric tons)

	Estimated Output	Estimated Requirements
USSR	220	220 [1]
Orbit Countries		
1. European orbit	20	40
2. Far East	10	10
Western Europe	200	180
Total	450	450

[1] USSR — fabricating facilities limited.

f. Copper.

During the war the USSR produced as much as 160,000 metric tons of primary copper annually, with secondary metal amounting to 30,000 tons. Since consumption exceeded 310,000 tons annually, large amounts had to be imported to meet war needs. The production of copper in 1949 is expected to reach 260,000 tons (total secondary and primary), which will fall short of Soviet consumption in World War II.

The satellite countries are expected to produce about 100,000 tons in 1949, or enough to meet their estimated peacetime requirements in that year. Western Europe's requirements in 1949 will exceed its production by more than 200,000 tons. In 1949 the total output of areas assumed to be under Soviet control would be about 520,000 tons, which would not be sufficient by far to supply the total requirements of the area as a whole. Assuming that the needs of the USSR were first supplied, however, the tonnage available to the remainder of the area would about equal the average annual copper supply of Axis Europe in World War II.

ESTIMATED OUTPUT AND REQUIREMENTS OF PRIMARY AND SECONDARY COPPER IN THE USSR AND AREAS UNDER ITS CONTROL, 1949

(In thousands of metric tons)

	Probable Output	Estimated Requirements
USSR	260	310
Satellite Countries	100	100
Western Europe	160	370
Total	520	780

g. Lead.

Immediately prior to World War II (1939), the production of primary lead in the USSR was about 75,000 metric tons; output reached about 125,000 tons in 1943, but has since then declined. Deficiencies in the Soviet lead supply during the war were made up by imports from the United Kingdom and the United States through lend-lease.

The total output of lead in the USSR for 1949, including secondary, has been estimated at 150,000 metric tons. falling short of probable requirements in that year by 20,000 tons.

The production of lead from the satellite countries has been estimated at 80,000 metric tons in 1949, with requirements at 50,000 tons, indicating that the total output of lead in the USSR and the satellite countries combined would be able to satisfy requirements of the two areas. With regard to the rest of Europe, the estimated requirements of lead for the year 1949, 310,000 metric tons, would far exceed estimated production of 170,000 tons. Including all areas then, an estimated deficiency of approximately 130,000 metric tons is indicated.

ESTIMATED OUTPUT AND REQUIREMENTS OF PRIMARY AND SECONDARY LEAD IN THE USSR, THE EUROPEAN ORBIT, AND WESTERN EUROPE, 1949

(In thousands of metric tons)

	Estimated Output	Estimated Requirements
USSR	150	170
European Orbit	80	50
Western Europe	170	310
Total	400	530

h. Zinc.

The production of primary zinc in the USSR for the year 1939 was 85,000 metric tons; about 90,000 tons were produced in 1943. Prewar information indicated that independence from imports had about been achieved, but during the war 30,000 to 40,000 tons per year were imported, principally from the United States and the United Kingdom.

The total output of zinc, both primary and secondary, in the USSR for the year 1949 has been estimated at 135,000 metric tons and requirements at 155,000 tons.

It is estimated that the production of zinc in the satellite countries in 1949 will be about 130,000 metric tons and, under peacetime conditions requirements will be 75,000 tons, or an excess of output over requirements of 55,000 tons. The combined output of the USSR and satellite countries in 1949 is estimated at 265,000 tons and requirements at 230,000 tons, indicating an excess in output of 35,000 metric tons.

The estimated output of zinc in 1949 for the rest of Europe is 175,000 metric tons and requirements 270,000 tons, or a deficiency of 95,000 tons. Including all areas, the estimates indicate a deficiency of 60,000 metric tons.

THE ESTIMATED OUTPUT AND REQUIREMENTS OF PRIMARY AND SECONDARY ZINC IN THE USSR, THE EUROPEAN ORBIT, AND WESTERN EUROPE, 1949

(In thousands of metric tons)

	Estimated Output	Estimated Requirements
USSR	135	155
European Orbit	130	75
Western Europe	175	270
Total	440	500

i. Tin.

The present annual production of tin in the USSR is estimated at 7,500 metric tons; output in 1949 is estimated at about 8,000 tons, which will fall far short of requirements. The deficiency in USSR in 1949 would have to be met by imports through smuggling, or otherwise, from the Far East, for the total amount of tin available from the satellite countries as well as from the rest of Europe would be insufficient to fill all essential needs of the Soviet Union. Moreover, the tin requirements of Western Europe alone in 1949 would be greater than the combined production of all three areas.

2. Food and Agricultural Resources and Requirements.

If the area under domination of the Soviet Union should be extended to include Western and Northern Europe (excluding the United Kingdom) and the Middle East, indigenous production of food within the entire area would not be sufficient to feed the working population at levels which would permit normal industrial output and at the same time prevent widespread malnutrition among the remaining population.

Before the war, the average net import requirement of this area for bread grains and other grains combined was 8.3 million metric tons. During the consumption year 1 July 1947 to 30 June 1948, net imports into the area as a whole are estimated at 21.4 million metric tons, because of low production in some areas. With improved crop conditions generally, the 1948-49 import requirements have been forecast at 14.3 million metric tons. Assuming progressive economic recovery (including recovery in agriculture) in Western Europe, the net import requirement for 1949-50 is estimated at 11.6 million tons and for 1950-51 at 10.6 million metric tons.

In prewar years the Soviet Union, the satellite countries and the Soviet Zone of Germany together produced an export surplus of grains, which averaged 5.6 million metric tons. Because of poor crops in the satellite countries the grain surplus of this area was reduced to 1.2 million tons during 1947-48. During 1948-49, because of favorable weather and increased acreages, the grain surplus may increase to 2.6 million tons. During 1949-50 and 1950-51 the surplus production is expected to improve further to possibly 4.5 million metric tons.

Both western Germany and Austria were, before the war, grain deficit areas. If the Soviet Union, the satellite countries, and all of Germany and Austria are considered as a unit area, the prewar situation was one of surplus production with a net export of 1.2 million metric tons. In 1947-48, on the other hand, this area had a net import requirement of 4.7 million tons. Although crop prospects have improved in some of the Satellites and western Germany, the 1948-49 net import requirement for this area is expected to be 3.8 million tons. By 1949-50 the import requirement is expected to be reduced to 1.5 million tons and by 1950-51 to 1.1 million metric tons.

If the Soviet Union and all of Continental Europe are considered as a unit area, the prewar import requirements averaged 8.9 million metric tons. In 1947-48 the import requirement was increased to 21.2 million metric tons because of low production in the Satellites and Western Europe. The Soviet production in 1948 is about the same as in 1947, but the quality of the crop is poorer. In the Satellites and particularly in Western Europe, however, the grain harvests are better than those of the previous year, so that the net import requirement of Continental Europe and the Soviet Union combined for 1948-49 is expected to be around 14.0 million metric tons. In 1949-50 net grain import requirements are estimated at 11.8 million metric tons and, in 1950-51, at 10.9 million metric tons. *The above estimates assume continued increases in grain production which, with average weather conditions and improved farm techniques, are expected to take place on the European Continent. If the Soviet Union gained control of Western Europe by military action, however, grain and other food production would probably be substantially below the above estimates. This would increase the net deficit of the area correspondingly.*

The Middle East, including Turkey, Syria, Lebanon, Palestine, Iraq, Iran, and Egypt, was an area of surplus grain production before the war with average net exports of 0.6 million metric tons. In 1948-49 imports into the area are estimated at 0.4 million tons, but in 1949-50 the Middle East is expected to be again on a net export basis with estimated combined shipments of 0.15 million tons in that year and 0.3 million metric tons in 1950-51.

A summary of estimated grain production and trade, by the various unit areas indicated above, is shown in the table below. Similar over-all deficiencies would exist for other foods and for textile fibers.

From a long-range point of view the Soviet Union proper would make significant gains in the field of agricultural technology if Western Europe were brought under Soviet domination, provided the cooperation of the technologists involved could be obtained.

GRAIN: PRODUCTION AND NET TRADE OF SEPCIFIED AREAS. APPROXIMATIONS FOR YEAR 1 JULY 1948 THROUGH 30 JUNE 1949 COMPARED WITH ESTIMATES FOR 1947-48, EXPECTANCIES FOR 1949-50; 1950-51 AND WITH PREWAR AVERAGES.

	Prewar[1]		1947-48		1948-49		1949-50		1950-51	
	Production	Net[2] Trade	Production	Net Trade	Production	Net Trade	Production	Net Trade	Production	Net Trade
	Millions of Metric Tons									
Soviet Union, Satellites, and German Soviet Zone										
Bread Grains	79.1	—3.0	63.8	— 0.4	73.1	— 1.3	73.0	— 2.1	76.7	— 2.2
Other Grains[3]	65.9	—2.6	51.9	— 0.8	46.7	— 1.3	53.4	— 2.3	58.1	— 2.3
Total Grains	145.0	—5.6	115.7	— 1.2	119.8	— 2.6	126.4	— 4.4	134.8	— 4.5
Soviet Union, Satellites, Austria and all Germany										
Bread Grains	85.7	—0.7	68.1	+ 5.3	77.7	+ 3.3	78.8	+ 2.5	83.3	+ 1.8
Other Grains[3]	71.8	—0.5	56.0	— 0.6	50.4	+ 0.5	58.0	— 1.0	63.4	— 0.7
Total Grains	157.5	—1.2	124.1	+ 4.7	128.1	+ 3.8	136.8	+ 1.5	146.7	+ 1.1
Soviet Union and Continental Europe										
Bread Grains	112.0	+3.6	84.9	+16.1	101.7	+ 9.2	103.6	+ 8.5	109.1	+ 7.8
Other Grains[3]	94.3	+5.3	73.2	+ 5.1	70.1	+ 4.7	80.1	+ 3.3	86.4	+ 3.1
Total Grains	206.3	+8.9	158.1	+21.2	171.8	+13.9	183.7	+11.8	194.5	+10.9
Soviet Union, Continental Europe, and Middle East										
Bread Grains	120.1	+3.5	92.8	+16.6	110.0	+ 9.5	112.1	+ 8.4	118.3	+ 7.7
Other Grains[3]	102.1	+4.8	81.6	+ 4.8	78.0	+ 4.8	88.1	+ 3.2	94.7	+ 2.9
Total Grains	222.2	+8.3	174.4	+21.4	188.1	+14.3	200.2	+11.6	213.0	+10.6

[1] Annual averages of midyear 1933 to midyear 1937, except for Germany and Soviet Zone of Germany (midyear 1934 to midyear 1938) and Middle East (calendar year 1934-1938).

[2] Minus (—) indicates exports; plus (+) indicates imports.

[3] Includes rice, calculated to rough basis whenever possible.

Note: Data compiled as of 5 August 1948.

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From a short-time point of view, however, the extension of Soviet control to Western Europe by military action would probably result in a reduction of indigenous farm products made available for non-farm consumption and, with a shutting off of imports from overseas, the shortage of food in urban areas would be even greater than has prevailed since the end of World War II assuming comparable weather conditions.

3. MANPOWER.

The total Soviet labor force at the beginning of 1948 is estimated to have been quantitatively somewhat weaker than it was at the beginning of World War II, but considerably stronger than during the war. It is difficult to make even such general comments about the qualitative strength of the current labor force. During and since the war, considerable numbers of workers have acquired important skills, thus making the labor force, on the average, more highly skilled than in 1941. Nevertheless, in part, because of the magnitude of the present programs of reconstruction and industrial expansion, the Soviet economy at present is believed to be hampered by shortages of skilled workers.

Under Soviet control of the European continent, any labor shortages of the USSR, especially shortages of skilled workers, could probably be met by moving workers from the Soviet orbit, and certainly from the conquered area, particularly Western Europe. The highly industrialized countries of Western Europe are obviously potential sources of any types of industrial labor in which the USSR is deficient. Occupation of Western Europe alone would more than double the technically skilled manpower — engineering, mechanical, managerial — available to the Soviet Union. Specifically, it would increase the nonagricultural labor force under direct Soviet control from approximately 32 millions to 84 millions, compared to about 50 millions in the United States (see table below). While Western Europe and Eastern Europe are capable of supplementing the Soviet labor force so as to insure peak war production, Soviet exploitation of their economies, on the other hand, may encounter shortages of skilled manpower in certain key industries such as coal, steel, and engineering, even at a reduced level of output.

ESTIMATED LABOR FORCE OF THE USSR, WESTERN EUROPE, AND UNITED STATES, JANUARY 1948

(In millions of laborers)

AREA	TOTAL LABOR FORCE	AGRICULTURAL LABOR FORCE	NON-AGRICULTURAL LABOR FORCE
USSR	83.5	52.0	31.5
Western Europe (including Trizonia)	85.9	33.1	52.8
Total	169.4	85.1	84.3
United States	57.1	7.1	50.0

4. MACHINERY INDUSTRIES.

Since the USSR was able to conduct warfare on the scale of the Second World War with a plant and equipment inventory greatly weakened by German destruction and

occupation, it certainly could now produce sufficient military equipment to maintain a comparable level of military activity. Current Soviet machine-building capacity exceeds the 1940 level by a substantial margin. By the summer of 1947, the prewar production levels for almost all items of equipment had been reached or exceeded by Soviet industry; since then there has been a steady rise in output. In terms of machine capacity only, therefore, the Soviet Union is capable of exceeding its World War II performance. Despite this comparatively strong position, however, some machinery and equipment, such as precision instruments, automatic machine tools, high-production precision machine tools, and equipment for the manufacture of high octane gasoline, are currently in relatively short supply in the USSR.

The absorption of the Near East by the USSR would offer very few, if any, additions to the metal-working capacity of the Soviet economy. Moreover, under the assumption that a large part of the oil facilities and installations in the Near East would be seriously damaged or destroyed prior to evacuation by the present operators, this area would constitute a drain on the Soviet machine-building industries, if the Near East oil fields were to be restored.

Control of Eastern and Western Europe, particularly the latter, would materially augment Soviet capacity to construct machinery. In addition, European facilities for the production of various specific types of equipment such as those in short supply in the USSR at present, would relieve a current Soviet deficiency. As a result of the added capacity, the machine-building potential of the Soviet-controlled area would approach the combined Soviet and Axis potential of World War II. Consideration has not been given, however, to such factors as raw material supply, skilled labor, and transportation; these factors, throughout all areas, are likely to be more limiting than the plant capacity to produce.

5. Production of Munitions.

Seizure and exploitation of the armaments industries of Eastern and Western Europe would add materially to Soviet military potentialities. Of immediate significance to Soviet capabilities are the munitions industries of the satellite countries of Eastern Europe. Some of these industries have already been converted to production of Soviet munitions, apparently with the objective of eventual standardization of ground force weapons within the Soviet bloc. The complete integration of Czechoslovakian, Polish, Hungarian, and Rumanian industries with that of the USSR would provide a very significant addition to Soviet capacity; the other satellite countries, however, possess small and relatively undeveloped industries, generally capable of producing only weapons parts and ammunition in limited quantities.

The principal immediate asset to be derived from Soviet acquisition of the countries of Western Europe would be the large reservoir of manpower skilled in the techniques of modern weapons production. The potential value of the munitions industries themselves to the Soviets are great, but their present lack of capacity resulting from wartime losses, and deficiencies in supply of basic raw materials would tend to limit their effectiveness for Soviet production plans until after 1950.

6. PRODUCTION OF AIRCRAFT.

The USSR is estimated to have immediate production capabilities of about 4,900 jet aircraft per year, of which all but 120 are fighters, and 16,700 conventional aircraft, or a total capability of 21,600 aircraft. By the last quarter of 1949, the USSR will have estimated production capabilities of about 15,800 jet aircraft per year, of which all but about 540 will be fighters, and 41,500 conventional aircraft, or a total capability of about 57,300 aircraft annually. No foreseeable bottlenecks would prevent the attainment of the above programs.

During 1947 aircraft production in Europe, except for the United Kingdom and the USSR, approximated 2,000 aircraft of both civil and military types (excluding gliders). The more important producers were France, Czechoslovakia, Sweden, Denmark, Switzerland, Italy, the Netherlands, Turkey, Poland, and Belgium; output in the remaining European countries was negligible. Jet aircraft production was largely in the design and experimental stage. Only a few prototypes were constructed. In 1948 it is estimated that aircraft production will reach 2,500 airframes with small series construction of jet aircraft in France and Sweden. Stimulated by the political deterioration of the situation in Europe, it is predicted that output levels may reach 3,500 aircraft in 1949 and 5,500 in 1950, provided Soviet domination is not previously extended over the entire area.

If the USSR gains control of Europe, it is estimated that the Soviets will have acquired aircraft productive facilities having a combined *optimum* output of 24,000 civil and military aircraft per year. Under conditions of occupation, however, actual output is expected to be far from optimum. It is doubtful if the Soviets could push production beyond 15,000 aircraft per year prior to 1950. About two-fifths of this 15,000 figure would be produced by countries already behind the iron curtain. This estimate excludes the productive facilities of Germany, Austria, and other occupied countries which have already been largely integrated into the aircraft industry of the USSR.

In summary, within the USSR and those European countries now under Soviet control, taken together, it is possible that aircraft production could be stepped up to an annual rate of 23,000 - 24,000 within six weeks' time. By 1950 this figure could be increased to 63,000 - 64,000 aircraft annually. If the Soviets should gain control of the entire European continent in the immediate future, the 1950 rate of production could be on the order of 73,000 - 75,000 aircraft per year.

7. ECONOMIC ORGANIZATION AND CONTROL.

In the event of Soviet occupation of Western Europe, it is expected that the economic administration of these countries will, insofar as possible, be in the hands of native Communist regimes rather than under direct Soviet military or civil control; effective ultimate control, of course, would be in the hands of the USSR. Preference for this type of control stems, in part, from the shortage of skilled Soviet personnel for the direct administration of the countries overrun. In some of the Western European countries, however, particularly in those without strong Communist groups, economic administration would probably be under direct Soviet control, although native per-

sonnel would still be widely used for intermediate positions. Despite arrangements to employ native organizational abilities, considerable numbers of Soviet personnel would be required for the administration of broad controls and for general supervision. The USSR would not be able to supply sufficient numbers of qualified personnel for these purposes.

Among others, the following developments would probably take place as a result of action by the USSR to establish Soviet control over the economies of the countries:

a. Non-collaborators with the Soviet regime would be eliminated from positions of importance in the economy, including non-collaborators among the management personnel of at least the more important industrial plants;

b. Communist control of labor unions would be complete, and labor resistance minimized to the fullest extent possible; nevertheless it is believed that certain elements of the population such as those technically trained would be particularly reluctant to collaborate;

c. Certain numbers of administrative and managerial personnel would be obtained from the ranks of Communists, from those willing to join forces with the new regime, or through effective control over the persons and families of those involved.

The economic reorganization of the European continent under Soviet occupation would result in an immediate decline in over-all industrial production, as well as food deliveries to non-farm areas, largely because of changes in organization and management and aversion of the technically trained populace to collaborate fully. If the USSR should obtain a negotiated peace shortly after occupation of the continent, it is believed that Soviet organizational and administrative capabilities would be sufficient to cope with these problems successfully, given a period of years to concentrate on their solution. If the USSR, on the other hand, should face a continuing global war with the United States and its allies, the problems of economic organization and control of the European continent will be of increased magnitude and of a more continuing nature. There probably would be increased difficulty in dealing with resistance to collaboration, particularly on the part of technically trained personnel. Under these conditions, the Soviet Union probably could not cope efficiently with the organizational problems. The effect of this factor on industrial output cannot be determined in concrete terms; it is believed, however, that it would be sizeable.

8. TRANSPORTATION.

Under the conditions assumed, the USSR would acquire, particularly in Western Europe, highly organized rail transportation systems which are closely geared to the economic structures of the respective nations. The USSR would also improve its over-all transportation capability by the acquisition of extensive railway equipment-manufacturing facilities in which the USSR is notably deficient. The quantities of goods which land transportations systems would be required to move in the conquered areas would be slightly less than they are now handling and therefore should present no serious problem.

By seizing control of the rail systems of the European Continent and Near East, the USSR would gain internal lines of communication extending to numerous ports on the

Atlantic, Mediterranean, and Persian Gulf, connecting every major port and industrial region of the conquered areas with the transportation net-work of the Soviet Union. The USSR would thus acquire a high degree of flexibility for the organized distribution, in conformity with a comprehensive program, of the combined raw materials and finished products of the areas between Vladivostok and Gibraltar.

The extensive shipbuilding capacity of Western Europe (at least five times present Soviet capacity) would permit the USSR rapidly to expand its merchant fleet. Greatly increased movements of freight between Western European ports and the Black Sea would be possible at low cost, and increased coastwise shipping would indirectly augment the capacity of the land transportation systems. Additional quantities of freight could be shipped from the Black Sea to the Maritime Provinces, which cannot now be satisfactorily supplied by the Trans-Siberian railroad and the limited amount of ocean shipping available. Likewise, oil could be moved from the Eastern Mediterranean and the Persian Gulf to export markets and to Soviet ports.

A specific advantage which would result would be an ability to draw on the immense capacities of warm-water ports throughout Europe to supplement the severely restricted capacities of ice-bound Soviet ports.

However, under the conditions assumed, the effectiveness of all ports controlled by the USSR would be sharply reduced. Allied blockades would rapidly eliminate most of the Soviet overseas trade and would severely restrict the volume of coastwise shipping. The USSR, therefore, would not be able to exploit fully the advantages of the extensive shipbuilding capacity in conquered areas.

The foregoing conditions would throw an additional burden on the land transportation systems. The strategic necessity of relying upon sources of supply east of the "iron curtain" for a substantial part of the military supplies required in Western Europe and the Near East would further increase the demands placed on the land transportation systems.

Although the rail systems of Europe are, in general, on the mend and are capable of handling present peacetime traffic, and while it is anticipated that the USSR would attempt to expand capacities, the growing effectiveness of allied counter-action, plus local sabotage, would rapidly reduce the railway systems of Europe to a condition in which only the barest industrial and military requirements could be handled. Complete collapse in certain areas could be averted only at excessive cost in labor and materials.

A particularly weak spot in the Soviet rail transportation system would persist in the war-damaged, dismantled, and deteriorated rail system in the Soviet Zone of Germany. This system, on the verge of collapse, is handling less than half of its normal peacetime volume of traffic. There is at the most only one double-track line into Berlin. Under wartime conditions the system might be organized on the basis of one-way lines, which could probably handle minimum military requirements for through traffic. The system would hardly permit the full exploitation of the industrial potential of the area by the USSR.

Another specific weakness would result from the poor linkage in land transportation facilities from the USSR to the eastern Mediterranean and the Persian Gulf. While

Limitations due to transshipment between U.S.S.R. and the West due to differences in gauges (?)

the rail system in this area would support Soviet occupation forces on a moderate scale, it would not support the requirements of an active defense of any sizeable scale, and would be particularly vulnerable to Allied counter-action and disruption caused by the actions of local populations.

SCIENTIFIC APPENDIX

CONCLUSIONS

1. Limited strategic advantages in theoretical and applied science and in development engineering would be obtained by the USSR in overrunning Western Europe and the Middle East to Cairo for the first six months to two years of Soviet occupation. Thereafter, exploitation of the facilities and personnel of the pure and applied scientific institutions, in highly industrialized Western Europe would, through assimilation into the scientific and industrial structure of the USSR, begin to have an ever greater beneficial effect upon Soviet war potential, and could increase that potential by as much as 50 percent within five to seven years.

2. In addition to over-all improvement in strategic position, specific phases of the Soviet military program would be affected to a much greater degree, largely because the Western European facilities in the scientific field supplement in many instances the known deficiencies in the Soviet scientific and industrial structure. It is believed that by overrunning Western Europe in 1948 the probable date by which the USSR will have exploded its first atomic bomb would be advanced by one to two years ahead of mid-1953. Production of a significant stockpile of the bombs would be advanced. Research and design of guided missiles, aircraft, and electronic equipment are other significant spheres of activity where the acquisition of Western European facilities is believed to be of particular importance to the USSR. Although the stimulating effect on the general economy from the European Recovery Plan is expected to accelerate the postwar revitalization of Western European pure and applied science, an early move into Western Europe by the Soviets would bring a scientific gain for them in advancing their readiness for war. However, it is believed that the scientific gains would not be a sufficient motive for a move prior to 1 January 1950.

3. In the Middle East the USSR would acquire no important scientific facilities or personnel.

4. Should the Soviets overrun Western Europe during 1948 the earliest date that they *may have* exploded their first atomic bomb would be advanced three to six months ahead of mid-1950; the probable date by which the Soviets *will have* exploded their first atomic bomb would be advanced from mid-1953 to mid-1951. Should the Soviets wait until December 1949 to overrun Western Europe, the earliest date that they *may have* exploded their first atomic bomb would not be changed substantially; the probable date by which the Soviets *will have* exploded their first atomic bomb might be advanced to mid-1952. Acquisition of the engineering and manufacturing facilities of Western Europe would double the rate of progress of the Soviet atomic energy program. The present stockpile of uranium in France, which is equal to 25-50 percent of the present USSR stockpile, would be an immediate asset.

5. In view of the acute lack in the Soviet industrial structure of engineers, technicians, and special equipment required to translate scientific knowledge into production, the opportunity to acquire these essential factors in certain key industries could be

one of the most compelling motives for overrunning Western Europe. The more important industries are precision equipment, liquid fuels, the metallurgy of high speed and high temperature ferrous alloys and alloys of light metals, fine chemicals, and plastics. Many of the engineers and technicians who supervise design, development, and engineering possess high skill and creativeness which are comparable to the best technical ability in the US, and are consistent with the highly developed technique of these industries. The acquisition of the design and development facilities and the trained personnel of these industries alone would accelerate the Soviet industrial plans and production in all strategic fields by an estimated 15-30 percent within three years and the gain would increase with time.

6. Though the electronics industry might properly have been grouped with those industries discussed in the preceding paragraph, it is sufficiently important for special comment. The greatest problem facing the USSR in the application of electronics to the armed forces lies in the translation of research results into actual production — the intermediate engineering phase of industry. Here, the prominent research institutes, the technical laboratories, and the capable engineers of the highly developed Western European electronics industry could make valuable contributions to Soviet progress in radar, guided missile control, and other applications of electronics to modern warfare. The importance of skills and facilities acquired in this field cannot be overestimated. Based on the electronic tube production of Western Europe it is estimated that the Soviet electronics capacity would be doubled or trebled by the acquisition of the Western European facilities.

7. In aircraft and guided missile research and development the facilities of Western Europe are substantial. Their acquisition may be expected to: increase the Soviet capacity to produce existing types of guided missiles by 25 - 100 percent for certain operational German varieties; advance the timetable for the development of long-range (240 - 1200 miles) subsonic missiles by a few months; and increase the capacity for aircraft research by 25 percent. The date on which the USSR will have supersonic aircraft would not be advanced.

8. Since no significant progress in research and development of naval weapons has been made in Western Europe since 1945, direct and immediate gains to the Soviets would be slight. There are, however, groups of scientists and specific institutions in these countries which have made valuable contributions to the design and development of torpedoes and mines. If these were integrated into Soviet long-range plans for the development of naval weapons, they might readily have an important effect upon the ultimate product.

9. It is estimated that the Soviets are well prepared to wage chemical and biological warfare. From the point of view of long-range plans, however, Western Europe would provide the USSR with substantial physical facilities and highly competent personnel for the expansion of her production of both chemical and biological warfare agents and research directed towards new and improved agents.

10. An inventory of the scientific and experimental engineering personnel and the related equipment in the universities and industries of Western Europe makes an

impressive picture when compared with the corresponding assets of the comparatively recently industrialized USSR. In Western Europe there are about eighty universities and two hundred institutes of science, medicine, and technology, compared with thirty universities and five hundred scientific institutes in the USSR. If the USSR were to take over the Western European higher educational and organized research system *in toto*, the Soviets would increase their reservoir of potential scientists, engineers, and physicians by about 40 percent, and acquire 30 percent as many students as are now in corresponding USSR institutes. Although a small fraction of the facilities and the associated personnel might be exploited effectively shortly after the initial occupation, gains to the Soviets from the great bulk of the scientific potential will require five to nine years.

11. Efforts of the USSR to integrate quickly the Western European scientific and engineering personnel and facilities into the Soviet research program might lead to confusion and dissipation of effort that could temporarily impede Soviet scientific progress.

DETAILED BREAKDOWN

1. ATOMIC ENERGY.

a. Summary.

By overrunning Western Europe the Soviets will be able to advance (a) the date by which they *may have* exploded their first atomic bomb, and (b) the probable date by which the Soviets *will have* exploded their first atomic bomb.

b. Advantages.

Should the Soviets overrun Western Europe during 1948 the earliest date that the Soviets *may have* exploded their first atomic bomb would be advanced three to six months ahead of mid-1950; the probable date by which the Soviets *will have* exploded their first atomic bomb would be advanced from mid-1953 to mid-1951. Should the Soviets wait until December 1949 to overrun Western Europe, the earliest date that the Soviets *may have* exploded their first atomic bomb would not be changed substantially; the probable date by which the Soviets *will have* exploded their first atomic bomb might be advanced to mid-1952.

c. Disadvantages.

No important disadvantages to the Soviet atomic energy program are foreseen in the Soviet occupation of Western Europe and the Middle East.

d. Discussion.

(1) The engineering and manufacturing facilities of Western Europe, if fully exploited by the Soviets, would double the rate of progress of the Soviet atomic energy program; of particular importance are the designers and manufacturers of precision instruments and equipment.

(2) Soviet utilization of Western European skilled personnel would increase considerably the efficiency of Soviet industry, and consequently accelerate the Soviet atomic bomb project.

(3) Western European scientists who are Communists, and those who may be complacent during Soviet occupation of Western Europe, can be expected to make beneficial contributions to Soviet research and hence to long-range developments associated with the atomic energy program.

(4) Although considerable Western European research laboratory facilities and equipment were destroyed or damaged during the last war, several countries, such as Sweden and Switzerland, do have research facilities, which if acquired by the Soviets, would not only accelerate the current Soviet atomic energy program but would also contribute to future research and development.

(5) The present stockpile of uranium in France (equal to 25-50 percent of present USSR stockpile) would be an immediate asset to the Soviet atomic energy program. Should adequate methods be developed for processing the uranium-bearing

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shales of Sweden, these shales would increase the annual Soviet uranium supply by a factor of five to ten.

2. BIOLOGICAL WARFARE.

a. Summary.

Some advantages in biological warfare would be obtained by the USSR, involving the risk of only minor disadvantages, in overrunning Western Europe and the Middle East.

b. Advantages.

(1) The technical knowledge of France and western Germany, including the results of years of research, together with the operating personnel of biological research institutions, could shorten by perhaps a few months the time necessary for the Soviets to achieve a specific goal in biological warfare capability.

(2) The Soviets would acquire a group of French biologists having outstanding ability, who with other Western European scientists and engineers are capable of producing bacteria by the aerated culture method, at present the most promising large-scale bacteria production technique.

(3) A limited amount of specialized operational equipment with manufacturing capacity to design and build additional equipment would be obtained.

c. Disadvantages.

The drain upon both Soviet and indigenous medical facilities in several of the countries of Western Europe, and particularly in the Middle East, might hamper seriously the defensive combating of biological warfare.

d. Discussion.

(1) It is doubtful if the nations which had World War II biological warfare programs could contribute anything to that which it is believed the Soviets already know on the *offensive* aspects of biological warfare. However, by marshalling the personnel and knowledge of Western Europe for intensive biological warfare research, the rate of Soviet accomplishment could be increased. Under the most favorable circumstance, where one or more Western European scientists have or could devise the answer to the critical problems of dissemination, detection, and decontamination of biological warfare agents, the effectiveness of Soviet employment of biological warfare might be doubled or trebled in a short time.

(2) Despite the acceleration of the Soviet's own public health program and added emphasis on the training of physicians and assistants, the USSR could learn much from the countries of Western Europe. In the furtherance of *defensive* measures against biological warfare the doctors and public health administrators of Western Europe could be of great value to the Russians.

3. CHEMICAL WARFARE.

a. Summary.

Some advantages and no disadvantages would accrue to the Soviets through their overrunning Western Europe and the Middle East.

b. *Advantages.*

(1) The 15-20,000 qualified chemists and chemical engineers in Western Europe would represent an estimated 50 percent increase in personnel under Soviet control capable of conducting chemical warfare research and development.

(2) The chemical research and development facilities in France, Switzerland, Italy, Belgium, Sweden and western Germany would increase by approximately 50 percent the Soviet chemical research space adaptable to chemical warfare research.

(3) Soviet development of the German nerve gases that produce an extremely high percentage of mortality, could be greatly enhanced by the German research chemists and technicians who conducted the original work on the nerve gases. already in USSR

(4) A moderate number of facilities in France, Sweden, and Western Germany for study and production of the more common chemical warfare agents would increase the Soviet chemical warfare production capacity.

(5) Two French chemical warfare experimental stations and one Belgian station would represent a minor increase in the Soviet's present physical facilities.

(6) Stocks of protective masks and clothing of improved design in Sweden, Belgium, and France would enhance the USSR position in defensive chemical warfare.

c. *Disadvantages.*

No disadvantages to the USSR chemical warfare program are foreseen.

d. *Discussion.*

(1) Chemical research laboratories which the USSR would acquire in Western Europe, in comparison with her own laboratories, would be of considerable value. Similarly the USSR would acquire capable chemical research personnel and, of greater immediate importance, the skilled technical force to operate an enlarged chemical warfare industry. In three to six months the laboratories and personnel could increase the Soviet capability in these categories by approximately 50 percent.

(2) In chemical warfare the countries of Western Europe and the Middle East, with the exception of France, have concerned themselves only with the defensive aspects. In Belgium, Denmark, France, Sweden, and Switzerland the respective armies are to an appreciable degree equipped to withstand attack by chemical warfare agents. It is probable that some technical information of importance to the USSR's defensive position might be obtained from the staffs of these armies.

(3) France besides her defensive preparations, has conducted research on the nerve gases and has now progressed to a large-scale laboratory production of one of these agents. The two French chemical warfare stations, though under-equipped and under-manned, would be of value to the USSR. Protective masks developed by various countries of Western Europe which would be improvements over existing Soviet equipment would place USSR troops in a better defensive position in chemical warfare.

(4) The numerous chemical research centers in western Germany, western Austria, Switzerland, Belgium, Sweden, Denmark, and Italy could figure in long-range development although their immediate value might not be great, as the USSR has

undoubtedly used to the fullest extent the advanced state of German knowledge in chemical warfare. The USSR's present position with regard to chemical warfare is so strong that the gains in Western Europe and the Middle East would be of greatest importance in the expansion of Soviet production of chemical warfare agents and in the long-term search for new and radical improvements.

4. ELECTRONICS.

a. Summary.

The Soviets would have much to gain and nothing to lose in the field of electronic research, development, and production, by overrunning Western Europe. They will neither gain nor lose in the field of electronics by overrunning the Middle East.

b. Advantages.

(1) The prominent research installations and outstanding research workers of Western Europe could make immediate and valuable contributions to Soviet progress. Of great importance would be the capability of development engineers and skilled labor, together with their precision machine tools, to adapt new developments to the needs of the USSR.

(2) Numerous specific types of developmental equipment which are improvements over existing Soviet models would be obtained.

(3) Based on the electronic tube production capacity of Western Europe, it is estimated that the Soviet electronics capacity would be doubled and possibly trebled by the acquisition of the facilities of Western Europe.

c. *Disadvantages.*

No disadvantages to the Soviet electronics program are foreseen.

d. Discussion.

(1) The greatest problem facing the USSR in the application of electronics to the armed forces lies in the translation of research results into actual production. The Soviet's greatest lack is in intermediate engineering, skilled labor, and precision machine tools.

(2) In correcting the problem of actual applied electronics, development, and production, the Soviet gain would be greatest in France, Holland, Italy, Switzerland, and Sweden, in that order. In electronics research significant gains would be obtained in France, Holland, Italy, and to a lesser extent in Sweden, Denmark, Switzerland, and western Germany, in that order.

5. GUIDED MISSILES.

a. Summary.

Some advantages and no disadvantages would be obtained in the field of guided missiles if the Soviets should overrun Western Europe. It is estimated that the Soviets would gain more in the guided missile field by occupying Western Europe at the end of

1949 than at the end of 1948, since Western European programs will be farther advanced by the end of 1949 and more new concepts, resulting in refinements in Soviet missiles, would be acquired.

b. Advantages.

(1) By the end of 1948 acquisition of Western Europe would augment the Soviet missile program by the addition of a significant number of qualified personnel and guided missile facilities for basic research and development. This augmentation might decrease by a few months the time for Soviet missile developments.

(2) By the end of 1949 the USSR would acquire in Western Europe significant basic missile designs, probably a small number of completed test results, and some new considerations in propulsion and guidance. These acquisitions might contribute considerably to Soviet refinements of their own missile program and might decrease the time required for the development of the more complex missiles.

(3) It is estimated that Western European production facilities for components, instruments, and similar elements would increase by 25-100 percent the Soviet capacity for production of existing types of guided missiles of the German operational varieties, plus some version of the Wasserfall and possibly the Schmetterling surface-to-air missiles.

c. Disadvantages.

No disadvantages to the Soviet guided missile program are foreseen.

d. Discussion.

(1) In the field of guided missiles Soviet occupation of Western Europe would permit exploitation of relevant activity in France, Switzerland, and Sweden, the only Western European countries presently engaged in missile development.

(2) By the end of 1948 Soviet acquisition of the French missile program would provide a significant number of experienced personnel and usable guided missile facilities qualified and organized for basic research. This situation in addition to probable French innovations in fuel developments, might decrease by a few months the time for Soviet development of long-range, subsonic missiles. By the end of 1949 Soviet acquisition of the French missile program would be more advantageous in that the program would be augmented by certain phases of completed basic research and test facilities in long-range, ram or turbojet missiles. Acquisition of these assets might advance the Soviet timetable for development of long-range (240-1200 miles) missiles by a few months.

(3) In Switzerland the primary advantage to the USSR by occupation would be the scientific knowledge and technical experience accompanying the development of the Oerlikon surface-to-air missile. During 1948 work on this missile may be far enough advanced to assist the USSR in making refinements in similar Soviet missiles. By the end of 1949 small quantities of the missiles as well as limited production facilities could be available to the Soviets. In this case, applied knowledge in missile guidance and fusing would probably contribute in a small degree to further refinements

of existing Soviet missiles. Production experience may slightly accelerate the Soviet missile manufacturing program.

(4) Though Sweden has evidenced some activity in guided missile development, the activity has not been sufficiently extensive to afford important advantages to the USSR.

(5) No guided missile research exists in the Middle East.

6. AIRCRAFT.

a. Summary.

In aircraft research and development some advantages and no disadvantages would accrue to the USSR in occupying Western Europe. Considering the expected improvements in the facilities, and the revitalizing of supporting industries, it is estimated that it would be more advantageous from the standpoint of gains accruing in aircraft research activities, for the USSR to occupy Western Europe at the end of 1949 than at the end of 1948.

b. Advantages.

(1) In Western Europe the USSR would increase its capacity in aircraft research by approximately 25 percent. The gain would be in trained aircraft research personnel and in the considerable research facilities, primarily wind tunnels. Acquisition of this advantage would contribute mainly to Soviet *subsonic* aircraft research.

(2) Supporting industries which are now receiving increasing governmental aid would come under Soviet control.

c. Disadvantages.

No disadvantages to Soviet aircraft development are foreseen.

d. Discussion.

(1) It is estimated that the acquisition of Western Europe in either 1948 or 1949 would not advance the date on which the USSR would have operational *supersonic* aircraft.

(2) The Western European countries possessing substantial aircraft research facilities of value to the USSR are France and Sweden; Italy and Switzerland would contribute some facilities of minor importance. The majority of the trained personnel would come from the countries possessing the research equipment, but other countries have some trained personnel primarily concerned with theoretical aeronautics and aerodynamics.

(3) France is expected to spend approximately thirty million dollars from 1947 to 1952 for construction of new wind tunnels and modernization of existing wind tunnels. An important installation, the German Oetztal wind tunnel, 25 feet in diameter with Mach Number 1, is now under reconstruction and may be substantially completed in 1949. Several small supersonic and subsonic wind tunnels are in operation. The work being conducted in France is mainly on prototype aircraft, but there is some basic research being conducted in "flow" phenomena. Comparing these wind

tunnel facilities with known facilities in or controlled by the USSR, it is estimated that Soviet acquisition of the French aircraft research capacity would increase the former's capacity by approximately 20 percent.

(4) In Sweden several wind tunnels are being utilized for research in ballistics, gas dynamics, and aerodynamics. The equipment is modern in all respects but the wind tunnels are small in size and limited in testing capacity. Swedish aircraft research conducted in the high speed wind tunnels is limited to component parts rather than complete aircraft. It is estimated that USSR acquisition of these installations would increase Soviet aircraft research capacity by approximately 5 percent.

(5) No aircraft research exists in the Middle East.

7. NAVAL WEAPONS.

a. Summary.

In the field of naval weapons there are some advantages and no disadvantages to the Soviets in overrunning Western Europe; no advantage or disadvantage will accrue to the Soviets in the Middle East.

b. Advantages.

(1) Research plants and testing laboratories for the production of naval weapons in France, Italy, and Sweden would be a valuable acquisition to the USSR.

(2) Competent scientists and technicians who have made valuable contributions to the design and development of torpedoes and mines in Italy and Sweden would be a beneficial addition to the Soviet capability to develop naval weapons.

c. Disadvantages.

No disadvantages to Soviet naval weapon development program are foreseen.

d. Discussion.

(1) No significant progress in research and development on naval weapons has been made in Western Europe since 1945. However, in France, Italy, and Sweden there are research plants and testing laboratories for the production of naval weapons that would be a valuable addition to similar types of Soviet installations.

(2) In Italy and Sweden a number of highly competent scientists and technicians have completed valuable work on the design and development of torpedoes and mines and could increase the Soviet capability in this field though not necessarily adding any knowledge not already possessed by the Soviets.

(3) No naval weapon research exists in the Middle East.

8. MISCELLANEOUS.

a. Summary.

The applied science and developmental engineering associated with the subject industries in Western Europe, together with the trained personnel and facilities necessary for their operation, would be one of the most important advantages to be derived by the Soviets in the occupation of Western Europe.

b. *Advantages.*

The acquisition and assimilation of the experimental engineering, design and development facilities, and trained personnel of the subject industries in Western Europe could, by overcoming existing Soviet deficiencies, speed up the industrial planning and output of the USSR in all fields by an estimated 15-30 percent.

c. *Disadvantages.*

There are none foreseen.

d. *Discussion.*

(1) *General.*

(a) Nine countries in Western Europe and Scandinavia have significant and well established applied research, process engineering, and product development in one or more of these industries. Of the competent engineers and technicians who supervise this development, many possess high skill and creativeness comparable to the best technical ability in this country and consistent with the highly developed art of these industries.

(b) In the aggregate the combined industrial potential of these countries is large. How large may be best visualized by considering an indirect measure of industrial activity, such as, the relation of installed electrical capacity to the population. These countries have a total electrical capacity of over twice that of the entire USSR and half that of the United States, whereas the combined population is slightly more than that of this country and almost equal to that of the USSR.

(c) In total technical potential for the six industries under discussion the countries are in the order of their importance: France, western Germany, Italy, Switzerland, Sweden, Belgium, Netherlands, Norway, and Denmark. Other European countries and those of the Middle East have practically no important industry, except the production and refining of petroleum. Since the petroleum companies of the Middle East are foreign owned, the process development is carried on in the country of the parent company and not in the territory under discussion.

(d) Important as the applied research of these European countries is, considered merely as an integral part of their industries, the significance to the Soviet Union is much greater because in general the skills and equipment of the development stage of an industry are equally applicable to a wide variety of problems within the industry, in fact, oftentimes to those of related industries. Therefore the assimilation of the applied research, engineering and design facilities of Europe within the USSR industrial pattern should advance the over-all industrialization within a year's time substantially beyond that attributable alone to the acquisition of the production capacities of these countries.

(2) *Precision Machinery.*

(a) Even though precision equipment plays an important strategic role in the production of war material as well as normal civilian commodities, the Soviet's precision machine tool industry was initiated just prior to the war and in 1941 produc-

tion was very small. The industry was heavily damaged in the war, and in spite of substantial receipts through lend-lease and the acquisition of large amounts of precision equipment and tools from more than 1,000 plants in Germany, this type of machinery is still critically short in the USSR.

(b) In Europe there are five countries that have well established precision machine tool industries. Switzerland leads the world in quality of fine measuring tools, gage blocks, precision machinery and precision measuring techniques and has a large supply of highly trained artisans and technicians. From a theoretical engineering standpoint, the industry there is ahead of that in this country, though behind in practical engineering. Sweden has one concern internationally famous in the field of anti-friction and ball bearings. In France and Italy the precision machinery industry is closely allied with the automotive industry in which the leading manufacturers have well integrated technical staffs skilled in the design and development of precision machinery.

(c) The combined development potential in this industry in the European countries is estimated to be at least equal to that of the US. In general, the highly skilled technicians are as creative and ingenious as the leaders in this country, but the supporting technicians are of inferior caliber.

(3) *Instruments.*

(a) Like the precision machinery industry the instrument industry in the USSR was initiated immediately prior to the war. It was heavily concentrated at Kiev and Leningrad and consequently badly damaged in the war. Even though the fourth five-year plan calls for production of industrial instruments, both optical and electric, seven times that of 1940, instrumentation continues to be one of the critical items in Soviet industrial plans.

(b) In the scientific instrument field, the Western European countries rank as follows: The Netherlands, western Germany, Switzerland, and France. The others are of no consequence, although western Germany and Italy have important optical industries. In general, the quality of instrument development in Europe is inferior to that of this country and they have neither the talent nor the incentive to produce gas diffusion instruments, such as were used in carload lots at Oak Ridge. Although the instrument industry of Germany was badly damaged during the war, remarkable progress has been made toward recovery in the British and US Zones, where the plants remaining were found to be 90 percent intact. Much of the personnel and equipment in the instrument industry formerly located in Germany migrated during the war to France, Italy, Sweden, and Switzerland. Hence, it is estimated that the potential in the development and design of all types of instruments is as great in Western Europe today as prewar.

(4) *Liquid Fuels.*

(a) The technical and operational level of the liquid fuels industry of the USSR is relatively undeveloped and far behind that of this country. Although thermal cracking in the production of gasoline started in 1928, there were still no catalytic cracking units in the USSR at the outbreak of the war.

(b) In western Germany, France, and Sweden are sizable plants and personnel especially trained in pilot plant operations for the production of both natural and synthetic liquid fuels. France has three plants for processing shale, employing 1,800, of whom 40 are experienced in pilot plant and development work. Combined production of these plants is roughly 600,000 metric tons per year. In addition, three organizations concerned with applied research and development on liquid fuels have at least twenty-five top flight engineers supported by as many more creative workers. Germany has five hydrogenation and six Fisher-Tropsch plants employing some fifty engineers with pilot plant experience. There is in addition one plant for processing shale having at least forty employees with pilot plant experience. The combined capacity of these plants is 1,600,000 metric tons. Sweden has a single plant for processing shale with a staff of fifty technically trained engineers, forty of whom have had pilot plant experience. The installation consists of three or four projects all sponsored by the Government. It is well integrated in the development and design phase. The production of this plant is about 1,000,000 metric tons per year.

(c) For the production of synthetic fuels, these three countries have a combined capacity of 3,200,000 metric tons per year, or 10 percent of the fourth Soviet five-year plan of 35.4 million metric tons annual production of liquid fuels to be achieved in 1950.

(5) *Metallurgy.*—Specifically high temperature, high speed alloys and light metals and their non-ferrous alloys.

In this field the development in Europe that would be of particular benefit to the USSR is concentrated in the rather extensive hydroelectric metallurgical industry in France, Northern Italy, Sweden, Norway, and Switzerland. These countries have large electric smelting operations for aluminum and other metals as well as a wide variety of other electric metallurgic processes. In general the equipment is good by American standards and the metallurgists in charge of the technical developments of these industries are highly trained, in fact more comprehensively trained than corresponding personnel of this country. In Germany the industry for the manufacture of high temperature alloys is better equipped with craftsmen and highly trained technicians than the corresponding American industry, where the chief problem is to bridge the gap between scientific knowledge and the metal industry operators. This gap between theory and practice exists to a much greater degree in the USSR. One concern in Germany has a world-wide reputation for the melting of high temperature materials, the development of large capacity melting furnaces and special techniques for the hot rolling of high alloy materials. The high frequency and vacuum melting units of that country are so important that probably they should be concentrated in an area where they could be evacuated or destroyed in case of any move as postulated under this project.

(6) *Photographic Supplies and Fine Chemicals.*

In Belgium a single firm dominates the photographic field, producing films, plates, paper, and chemicals for exports to all parts of the world, except US, Japan, and Soviet-dominated countries. It is one of the world's largest producers of film.

France and Germany have large and well established chemical industries producing all types of dyes, photographic materials, and fine chemicals. In conjunction with these large chemical industries, there may be presumed to be a substantial amount of applied research and experimental engineering in progress. In Switzerland several firms are leaders in the manufacture of fine chemicals of high quality.

(7) *Plastics (Including synthetic rubber).*

Practically the only output in Western Europe of synthetic rubber is from experimental projects. France and Switzerland have well established plastic industries, individual members of which have cross-licensing agreements with corresponding American firms. Because of this arrangement, many of this country's most recent developments in the field of plastics and current technical information would become available to the USSR.

9. PERSONNEL.

a. Summary.

In Western Europe, with the exception of Spain and Portugal, the USSR would gain considerably in the acquisition of industrial and educational laboratory facilities and their associated scientific and technological personnel. In the Middle East the gain would be negligible.

b. Advantages.

(1) Given an estimated six months to two years for coordination, the Soviets would increase their active scientific and engineering manpower by approximately fifty percent, their potential reservoir of scientists (i.e. students) by approximately 40 percent, their laboratory facilities for research by approximately 50 percent.

(2) Included in the above would be a small but important number of scientists and engineers who, because of the international character of the companies where they are employed, have knowledge of US and UK research and developmental trends.

c. Disadvantages.

The attempt to integrate Western European scientific and engineering personnel into Soviet research programs might lead to confusion and dissipation of effort that could temporarily impede Soviet progress.

d. Discussion.

(1) *Research Equipment and Laboratories.*

(a) In Western Europe there are about eighty universities and 200 institutes of science, medicine, and technology, as compared with thirty universities and 500 scientific institutes in the USSR. Thus, by overrunning Western Europe, the USSR would acquire more than twice the number of universities which it has at present, and almost half the number of specialized institutes.

(b) The Research Centers which would be of the most immediate benefit to the USSR are the weapons laboratories in Switzerland, Sweden, and Italy; the aerodynamics facilities in France; the nuclear physics laboratories in France, Switzerland, Belgium, and Scandinavia; and the electronics laboratories at Paris, France and at Eindhoven, The Netherlands.

(c) The advantage accruing in laboratory facilities, i.e., expropriated precision measuring instruments, cyclotrons, wind tunnels, and other equipment, would range from an immediate gain of some 5 percent in USSR domestic efficiency to a steadily increasing gain of some 50 percent for all the Soviet area.

(2) *Scientific Manpower.*

(a) In Western Europe there are approximately 260,000 students in higher educational institutions, while the USSR proper has about 660,000 such students. The present Soviet zone of influence probably increases the number of Soviet-dominated students by approximately 20 percent. If the USSR were to take over the Western European educational system *in toto,* the Soviets would increase their reservoir of potential scientists, engineers, and physicians by about 40 percent.

(b) By using a broad estimate based on the fact that most of the countries of Western Europe have, on an average, a comparable number of scientists per head of population, it is believed that the Soviet scientific manpower potential, both industrial and academic, would be increased about 80 percent given full collaboration from these scientists. However, practical difficulties such as employing each in his most useful field, the possibility of non-collaboration, and the inadequacy of certain facilities would suggest about 50 percent as the final probable advantage.

(c) It is believed that the technological advance made by the USSR since World War II is due in large measure to the use of those Europeans, particularly the Germans, not under control of the Soviets. By applying the lessons learned in the Soviet zones of Germany and Austria, the USSR could begin to receive certain benefits from the services of acquired scientific personnel in six months to a year.

(3) *Scientific Projects under Development.*

(a) The extent of the benefits to be derived would depend on the status of the research projects in the acquired laboratories and on how closely such projects parallel Soviet paths of investigation.

(b) The laboratories mentioned in 4 (a) above, are engaged in research projects which, because of the quality of the men, equipment, and type of investigations, would become Russia's chief asset in scientific war potential.

(4) *Total Advantages to USSR.*

A projected scientific advantage would result from Soviet control of Western Europe; that is, by the integration of the scientific strength now scattered among the independent European nationals. In Sweden and Belgium, although financial support is considered adequate, there is a lack of competent nuclear physicists; in Denmark and Italy there are good scientists but they are hampered by a lack of

funds; in Holland, by a lack of equipment. The Soviets probably would move the scientists in Denmark and Holland, for example, to the equipment in Sweden; and to appropriate funds for those research establishments most likely to produce best results, whatever their "national" location.

POLITICAL APPENDIX
CONCLUSIONS

Political considerations do not favor a Soviet decision to overrun Western Europe and the Near East prior to 1 January 1950.

This conclusion is based principally on the following considerations:

1. Occupation of Western Europe and the Near East would vastly increase Soviet security and administrative problems, and would create serious political instability throughout the Soviet orbit in the event of war.
2. The traditional Communist methods of subversion and infiltration, which are less costly and involve less risk than military action, still offer substantial possibilities for continued achievement of Soviet objectives.

DISCUSSION

1. OUTLINE OF POLITICAL CONSIDERATIONS INFLUENCING A SOVIET DECISION TO OVERRUN WESTERN EUROPE AND THE NEAR EAST BEFORE JANUARY 1, 1950.

a. Within the USSR.

Advantages.

(1) If it were possible to perpetuate the myth that the USSR was about to be attacked, the war might have the effect of unifying the Soviet people behind their government.

(2) The arrival of consumers' goods from Western Europe would serve to placate to some extent dissatisfaction among the Soviet people with the war.

(3) Easy initial victories of Soviet troops would enhance national pride and thus raise morale of the Soviet people.

Disadvantages.

(1) The resultant global conflict would place the entire Soviet system at stake in a war to the finish at a time when the USSR is inferior to the West in potential military power.

(2) Preparation for such an attack would serve to increase discontent among the Soviet people since Soviet industrial production would have to be increasingly diverted to military rather than consumer's purposes.

(3) The war would risk creating popular discontent within the USSR and would strain an already war-weary people.

(4) The war would make the task of internal security control within the USSR more difficult since the demand for trained security forces elsewhere in Europe would be so great.

(5) The war would risk mass desertions from the Soviet Army and might pave the way for anti-Soviet guerrilla action by Ukrainians and other Soviet peoples.

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(6) The overrunning of Western Europe and the Near East would make it far more difficult to insulate the Soviet people against what the regime considers the pernicious influence of foreign "bourgeois" culture.

(7) The war would risk increase in influence of the military and might constitute development of an organized and armed rival to the Party.

b. *Within the Present Soviet Satellites.*

Advantages.

(1) The present lack of effective opposition to the Communists would make occupation relatively easy.

(2) The conquest of Western Europe would bring all of Europe under direct Soviet influence and thus eliminate the capacity of contiguous non-Communist countries to influence the satellite peoples against the Soviet system.

Disadvantages.

(1) The USSR would have to deal with opposition, which might emerge among elements, quiescent under indigenous Communist occupation, that might rise in case of foreign occupation.

(2) Replacement of present Soviet troops by green, inexperienced forces might lead to excesses against local populations.

(3) Soviet personnel both stationed in and in transit through present Soviet Satellites would see the contrast between standard of living in the USSR and the Satellites.

c. *Western Europe.*

Advantages.

(1) Occupation would extend the area under Soviet political control to cover all of Europe. The USSR would thus be able to eliminate all organized anti-Soviet opposition on a national level and would gain a free hand in the Communist indoctrination of the population.

Disadvantages.

(1) Lack of trained Soviet personnel to administer the occupied areas would make the tasks of control and exploitation difficult.

(2) There is probability that Western European morale will be lowered because of Soviet inability to replace American help in food and raw materials to an exhausted Western Europe.

(3) Adverse effect of aggressive Soviet occupation on residue of sympathy for USSR among Western Europeans.

(4) Present Soviet and local Communist ability to criticize and disrupt without assuming responsibilities would be exchanged for the necessity to produce and deliver.

(5) Soviet occupation, requisitions for army of occupation, and suppressive Soviet measures would bring underground resistance which would provoke further repressive measures. In contrast to the German occupation which found Western

populations inexperienced in underground or partisan warfare, Soviet occupation would find them familiar with both.

(6) Subjection of Soviet troops and other personnel to Western democratic, Trotskyite, and anarchist propaganda. The last two groups are probably stronger in France at present than in any other country.

d. Near East.

Advantages.

(1) Occupation of Near East would give the USSR an advanced base for the political infiltration of North Africa, Pakistan, and India.

(2) The elimination of Western political, economic, and cultural influence in the Near East would eliminate *political* "capitalist encirclement" of the USSR in that vulnerable area.

e. The United States.

Advantages.

(1) The Soviet leaders might expect that their initial successes would produce pacificism and defeatism among various groups in the US.

Disadvantages.

(1) The Soviet attack would probably unite the American people and prevent the USSR from exploiting internal antagonisms in the US.

(2) The war would lead to strict control of Communists throughout the Western Hemisphere, thereby reducing opportunity for sabotage.

f. Rest of the World.

Advantages.

(1) The war might be the signal for insurrections in colonial areas.

(2) Soviet seizure of Near East might intimidate Egypt, India, and Pakistan into following neutral policy.

(3) Soviet seizure of Western Europe and the Near East would serve to bolster Communist groups in the Far East.

Disadvantages.

(1) Soviet seizure of Western Europe and the Near East might have the effect of strengthening the regimes of most non-European countries and uniting them into a cohesive bloc directed against the USSR.

2. PROBABLE SOVIET ANALYSIS OF THE POLITICAL CONSIDERATIONS OUTLINED ABOVE.

a. Within the USSR.

Advantages.

(1) The Kremlin probably would have no illusions that a war would unite the Soviet people behind their government. Soviet experience with the Ukrainians and certain of the Crimean and Caucasian peoples during World War II should serve to remind the Kremlin that its subjects are far from united. Furthermore, it is doubt-

ful that the Kremlin would predicate a major decision on an estimate of its ability to control public opinion. Some observers question the Politburo's success in assaying public opinion and sentiment. The elaborate network of spies and informers which has spread throughout all Soviet political, economic, and cultural life is evidence that the Kremlin is aware of this weakness.

(2) Increased availability of consumer goods—in the form of plunder from the West—would undoubtedly dispel some of the popular dissatisfaction with another war. It would, however, create another source of irritation, evident during the latter days of World War II—the dissatisfaction of the average Soviet citizen with distribution of the spoils. Furthermore, most of the Soviet people remember the privations suffered during 1941-1945, and would not be anxious to undergo again the suffering inherent in a prolonged war.

(3) Easy victories are, of course, a source of satisfaction to any national ego. However, the true test of a nation and its morale is its unity and determination in the face of adversity. The Kremlin is inhabited by planners, who look at long-range objectives as well as short-range, and it is doubtful that they would act on the basis of short-term advantage alone.

Disadvantages.

(1) The Soviet leaders, many of whom have spent thirty years in building up the power and prestige of their Socialist state, would be reluctant to stake their life's work on such an uncertain gamble for world power. The present leaders have consistently followed a policy distinguished chiefly by caution, and unless Stalin dies soon and the power exercised by him and his associates falls into the hands of younger and more impulsive leaders, it seems improbable that the USSR would presently risk a major war against the West.

(2) Soviet production is already geared primarily to military rather than consumer-goods production, and, while war preparations would further curtail the supply of consumer-goods and thus increase internal dissatisfaction, this condition might be temporarily alleviated by the arrival of loot from the West.

(3) While, in the initial stages, easy victories and loot would probably minimize any risk of popular discontent, the Kremlin would undoubtedly consider the long-range considerations more compelling, when the risk of popular discontent would be substantial. This, in conjunction with other factors (such as point *four*) would constitute a powerful deterrent to direct military action.

(4) Soviet obsession with security, as such, is well known to the western world and, at times, reaches extremes ridiculous to western eyes. The security forces of the USSR constitute an elite guard, especially chosen and intensively trained, and are thus limited in numbers. Current indications, such as the intellectual purges, anti-espionage legislation, etc., are that the Politburo considers present security machinery inadequate or at least not wholly effective. It is likely, therefore, that the Kremlin would overestimate rather than underestimate the security problems that a new war would engender.

(5) In the initial stages, the Soviet armed forces could, in all probability, cope with the problems of desertion and guerrilla activity, but the Kremlin probably realizes

that these factors would constitute a sizeable problem in a prolonged war, especially if shrewdly exploited by the psychological campaign of the West.

(6) Insulation of the Soviet people from foreign influences continues to be a matter of primary Kremlin concern. As in World War II, wartime conditions would undoubtedly weaken Soviet ideological defenses against Western influence. Judging from current efforts to eliminate the "survivals of capitalism," the dangers of exposing the Soviet people to foreign influences is probably substantially exaggerated by Kremlin minds.

(7) The Kremlin's jealousy of the military was indicated in the personnel shifts which followed World War II. While party control of the Army is probably sufficient, at least for the initial stage of "easy victories," the Kremlin might well be reluctant to have too much political responsibility devolve again upon the armed forces. Emphasis on the military inherent in a long war, would be especially undesirable if, during hostilities, the regime should undergo any fundamental transitions (such as might occur with the death of Stalin).

b. *Within the Present Soviet Satellites.*

Advantages.

(1) Kremlin leaders undoubtedly estimate that, under present conditions, Soviet forces would have little initial difficulty in occupying the whole of Eastern Europe. With all the satellite governments amenable to Moscow wishes, Soviet strategists would foresee no immediate effective opposition to direct Moscow control. In several of the East European countries such a move would merely mean replacing and increasing present occupation forces, and thus would offer no serious political complications. From the Moscow point of view, however, direct occupation of Eastern Europe is, in itself, highly undesirable, no matter how easy of execution. For the ultimate gains to the Communist cause in the satellite area are more readily attained under a Kremlin policy of ostensible non-interference in the affairs of the "friendly" neighbors of the Soviet Union. Soviet policymakers further must realize that the Eastern European peoples have accumulated a latent store of hatred for Communism. Consequently, an occupation that outwardly would look easy of execution could, in the long run, prove extremely costly.

(2) Soviet leaders have shown, by their many drastic attempts to seal off the satellite countries from Western Europe, that they regard the flow of Western democratic ideas into Eastern Europe as extremely harmful to the Communist cause. The Kremlin no doubt realizes that most of the Eastern European countries have known a higher standard of living than that thus far achieved under Communism. With the growing disparity in living standards between Communist Eastern Europe and ERP-aided Western Europe, and the comparative freedom of the latter, the Kremlin should foresee trouble arising from the impact of these factors on the ideologically unassimilated peoples of Eastern Europe. The Politburo might consider the need for severing this flow of subversive ideas into Eastern Europe as a strong argument for military occupation of the entire continent.

Disadvantages.

(1) Soviet leaders realize from experience of recent years the bitterness aroused in East European peoples by their subjection to Communist puppet governments, imposed with the backing of Soviet armed forces. The Soviet leaders also must estimate that increased anti-Communist underground movements throughout the satellites are an ever present threat, ready to resort to guerrilla and subversive action whenever sufficiently encouraged by the hope of external support. Kremlin planning must assume that encouragement and support for these underground movements would, in the event of Soviet aggression, be forthcoming from the United States. The prospect of widespread and effective underground activity behind Soviet front lines would consequently have a strong effect in dissuading the Kremlin from direct military action.

(2) The activities of Soviet troops during and after World War II, of which Kremlin leaders are fully cognizant, left a bitter imprint on the peoples of Eastern Europe. Personnel of the Soviet Armed Forces proved generally poor salesmen for Communism. In the event of Soviet occupation of the European continent, the more experienced and better disciplined troops would probably be deployed on the outer defense perimeter of Western Europe and the Near East. Eastern Europe, occupied by less disciplined forces, might be subjected to a second round of plunder and rapine before the bitter experience of World War II had even been forgotten. The excesses of Soviet forces occupying Eastern Europe would thus be likely to provoke such a degree of local resistance as to present the Soviet command with a grave security problem. Mounting sabotage and guerrilla warfare would probably threaten lines of communication. Kremlin leaders, well aware of the manifold difficulties caused by lack of proper discipline among their troops in the past, would be reluctant to face similar problems in the future.

(3) In view of the high rate of disaffection and desertion prevalent among present Soviet occupation forces, the Kremlin would be seriously concerned as to the wisdom of exposure of large additional forces to the same influences. Few questions appear to concern the Kremlin more than the ideological purity of its subjects, and Soviet leaders have learned by bitter experience that the "remnants of capitalist fleshpots" in Eastern Europe may corrupt even its best disciplined troops.

c. *Western Europe.*

Advantages.

(1) Occupation of Western Europe, which would give the Soviet Union control of all of the European continent, should appear to the Kremlin a very great political advantage. The long-term objective of Soviet leaders is to hasten the downfall of capitalism in all parts of the world, and to replace it with orthodox Communism. To sovietize the nations of Western Europe, with their world-wide prestige and influence, would be a tremendous step toward the realization of this long-range objective. The short term objective of the Kremlin is to ensure the security of the Soviet Union. The control of Western Europe would dispel to a great extent the fear of "capitalist encircle-

ment" from that area in the minds of the Soviet leaders. US influence on the Eurasian land mass would simultaneously be brought to a controllable minimum.

Disadvantages.

(1) The lack of trained Soviet personnel to administer the occupied areas of Western Europe would probably be viewed by the Kremlin as a formidable disadvantage. Soviet leaders, because of their inherent suspicion of Western Europeans, and because of their reliance within the USSR on a tightly controlled bureaucracy, would probably desire to have a larger number of reliable Soviet personnel in the occupied areas than would be available. While this lack could be offset to some degree by the use of local Communists and fellow travellers, the Kremlin appears reluctant to trust alien Communists with major responsibility.

(2) The Kremlin in all likelihood would consider that Western European morale would be lowered because of Soviet inability to supply the area with necessary food, raw materials, and manufactured products. It is not believed, however, that the Soviet leaders would consider the lowering of Western European morale as a major political disadvantage. The Kremlin might actually consider lower Western European morale as a political advantage on the assumption that a people without hope would prove much more amenable to Communist discipline and ideology.

(3) The Kremlin would probably realize that an aggressive Soviet occupation would have an adverse effect on the existing residue of sympathy for the USSR among Western Europeans. The Soviet leaders follow a policy based on the dictatorship of a comparatively small group, and therefore might tend to minimize the effects of this loss of popular sympathy. Furthermore, they might calculate that such a loss would occur only in the initial stages of occupation, and could subsequently be regained. Traditional respect of Western Europeans for civil rights, and experience in parliamentary government, would probably be of no great concern to the Kremlin.

(4) The Soviet leaders would probably have some trepidation as to the ability of leaders and members of Soviet and local Communist parties properly to carry out the administration of the occupied countries. Judging from the difficulties in Eastern Europe on this score, the Kremlin might be hesitant to take on such a colossal commitment which would, in their minds, positively bring on a war with the US, with resultant sharp increase of difficulty of political administration of Western Europe.

(5) Any Kremlin estimate of underground resistance as a political disadvantage would depend largely on two factors—(1) the number of occupation troops the USSR could maintain in the various countries of Western Europe, and (2) its confidence in its ability to win the ensuing war with the US. The Soviet leaders would probably estimate that ruthless counteraction by Soviet occupation forces with the aid of local Communists, who are uniquely equipped for such activity by training and World War II experience, could prevent underground resistance from assuming serious proportions. The Kremlin would further realize that underground resistance to Soviet occupation would increase in the event of Soviet military reverses.

(6) The subjection of Soviet troops and other personnel to the culture and standards of living of Western Europe would undoubtedly present a very formidable po-

litical disadvantage in Kremlin eyes. The constant attempt of the Soviet leaders to keep any Western influence from permeating the USSR, the record of desertions in Germany, and the stringent reindoctrination of returning occupation personnel show the Kremlin's fear of Western European influence on the Soviet population. The occupation of all Western Europe would expose such a large segment of Soviet personnel to some of the chief wellsprings of Western culture and ideology. Such exposure might not only seriously infect the morale of the occupation troops themselves, but could spread back into the Soviet civilian population.

d. Near East.

Advantages.

(1) Occupation of the Near East undoubtedly appeals to the Kremlin in that such action would further extend the area of Soviet influence and provide an advance base for the political infiltration of areas adjacent to the Near East. This advantage would, in the minds of Soviet leaders, be at least partially negated by the fact that military action in itself would tend to strengthen anti-Communist elements in adjacent areas and would thus make political infiltration much more difficult. Military action in the Near East would mark the abandonment by the Soviet Union of tactics employed more or less successfully since the end of the war. There is little evidence to substantiate the belief that Soviet methods of infiltration, subversion, and sabotage have reached the point of bankruptcy in the Near East.

(2) The Kremlin, in any contemplation of direct military action in the Near East, would consider the importance of eliminating Western political, economic, and cultural influence in that area. The importance of this influence at the present time may well be overestimated by the ever-suspicious USSR. Should the Kremlin become deluded by its own propaganda concerning "capitalistic encirclement" and become convinced of imminent aggressive action on the part of the United States, the elimination of US political, as well as military influence in the Near East might be a decisive factor in determining Soviet policy.

Disadvantages.

(1) The unification of the Moslem world against the USSR would undoubtedly appear to the Kremlin as a deterrent to direct military action. The population within the area occupied by the USSR would have a considerable potential for guerrilla action against the Soviets. In view of the nomadic character of many of the peoples and the problems of border control which would face the Soviet forces, movement of enemy reinforcement of personnel and material from the remainder of the Near and Middle East would be practically impossible to control. Those Moslems outside the area of Soviet occupation could be expected strongly to support any allied action against the Soviet position, particularly if furnished arms by the US.

e. The United States.

Advantages.

(1) The possibility of self-delusion within the Soviet hierarchy has been mentioned previously, and is likely to be a factor in connection with Soviet estimates

of the United States. Dictatorships of the past have been prone to underestimate the moral and political fibre of democratic peoples, and the Kremlin is probably no exception. Furthermore, Soviet leaders might hope that certain elements in the United States would attempt to impede an all-out military effort. Furthermore, Soviet propaganda, and perhaps Soviet intelligence as well, have for so long been emphasizing the disparity between the sentiments of the American people and the policies of their government that, in the view of some observers, the Kremlin may have persuaded itself that the US Government can no longer command adequately the confidence and loyalty of the people.

If Soviet estimates of the US have been distorted by the foregoing considerations, some Soviet leaders might reason: (1) that the "laboring masses" of the US would have no stomach for a war against the USSR for control of Europe; (2) that so long as US territory was not attacked, the US would be incapable of a united effort; (3) that, once the magnitude of the effort and sacrifice involved became apparent, US public opinion would be subject to growing doubt and uncertainty; and (4) that finally, by shrewdly exploiting the foregoing, the USSR could argue that all it sought was an equitable division of the globe between the two great powers, and thus could achieve either a negotiated peace, or at least a condition of armed truce, during which to consolidate its European positions and prepare for the decisive conflict at a later date.

Disadvantages.

(1) Despite the foregoing, however, the Kremlin has shown in the past that it can face facts and learn from experience, even when contrary to Marxist teachings. The Politburo, at least, must have been impressed with the US contributions in World War II—with the proved US moral and material capabilities. Furthermore, the Kremlin is today seeing a virtually unprecedented example of US solidarity and determination in resisting Soviet expansion. The US Communists are rapidly losing mass support—especially from the ranks of labor. Thus, Moscow can hardly fail to consider that Soviet aggression would be met by a united and determined US resistance.

(2) While Moscow probably counts heavily on the sabotage capabilities of international Communist organizations, the US is moving rapidly to reduce this danger. Furthermore, the experience of the Germans and Japanese with sabotage in the US can offer the Kremlin small encouragement.

b. *Rest of the World.*

Advantages.

(1) While the global war resulting from Soviet aggression might encourage insurrections in colonial areas throughout the world, the USSR would be in a poor position to influence or direct such insurrections, and hence, could hardly expect to exploit them for Communist ends.

(2) While Soviet seizure of the Near East might intimidate Egypt, India, and Pakistan into following a neutral policy, from the Kremlin point of view it might well have the opposite effect. If a "Holy War" were proclaimed, Moslems of all three countries would undoubtedly participate against the USSR. Furthermore, there is

no guarantee from the Soviet point of view that these three countries might not join an anti-Soviet bloc.

(3) While Soviet successes in Western Europe and the Near East would undoubtedly temporarily enhance Communist prestige and power in the Far East, the Soviet leaders would soon have to come to a decision as to whether to exploit the northern part of the area. The Kremlin would probably estimate that the rest of the Far East was too low on the Soviet timetable to be exploited by either the USSR or local Communists.

Disadvantages.

(1) The Kremlin has always displayed a great fear of the possibility of facing a world united against it. In considering aggression, the fact that these moves may unite most nations of the world in action against the USSR will be an important factor in dissuading the Kremlin from taking aggressive action.

(2) It appears unlikely that the Kremlin believes it can be assured of friendly, or at least neutral, regimes, especially in the Far East, without expending considerable political effort which would require a partial and costly diversion of attention from Europe and the Near East. Without the assurance of a security belt along its Far Eastern borders, the accompanying danger of a vulnerable "back door" will probably serve as a deterrent to Soviet aggressive action.

(3) Evaluated in terms of long-range objectives, the relatively small positive gains for the Soviet Union, both in Latin America and the Far East as a result of aggressive action, would be less than could be expected to result from peaceful exploitation of discontent among the population of these areas and the use of local Communist groups eventually to install regimes sympathetic to the USSR.

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3017—S—1948